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What is claimed is:

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- 1. A composition comprising a substantially purified thermostable AvIII peptide, said AviIII peptide comprising a catalytic domain GH74 and carbohydrate binding domain (CBD) III.
- 2. The composition of claim 1 wherein the thermostable AviIII peptide is further defined as comprising a linker and a signal sequence.
  - 3. The composition of claim 1 or 2 wherein the GH74 catalytic domain of the thermostable AviIII peptide is further defined as having a length of about 730 to about 760 amino acids.
  - 4. The composition of claim 1, 2, 3, or 4 wherein the carbohydrate binding domain (CBD) III of the thermostable AviIII peptide is further defined as comprising a length of about 80 to about 150 amino acids.
  - 5. The composition of claim 1,2,3 or 4 wherein the carbohydrate binding domain (CBD) III of the thermostable AviIII peptide is further defined as comprising a length of about 90 amino acids.
  - 6. The composition of claim 3 wherein the GH74 catalytic domain is further defined as a sequence of SEQ ID NO: 3.
  - 7. The composition of claim 4 wherein the carbohydrate binding domain (CBD) III is further defined as a sequence of SEQ ID NO: 4.
  - 8. The composition of claim 4 wherein the carbohydrate-binding domain (CBD) III is further defined as comprising the sequence of SEQ ID NO: 5.

- 9. The composition of claim 1 further defined as comprising a sequence of SEQ ID NO: 3 and SEQ ID NO: 4.
- 10. The composition of claim 1 further defined as comprising a nucleic acid sequence having about 70% sequence identity to the sequence of SEQ ID NO: 2.
- 11. The composition of claim 1 further defined as comprising a nucleic acid sequence having about 80% sequence identity to the sequence of SEQ ID NO: 2.
- 12. A thermostable AviIII peptide having a sequence of SEQ ID NO: 1.
- 13. The thermostable AviIII peptide of claim 12 further defined as having a sequence of SEQ ID NO: 2.
- 14. An industrial mixture suitable for degrading cellulose, such mixture comprising the thermostable AviIII polypeptide of claim 1.
- 15. The industrial mixture of claim 14 further defined as comprising a detergent.
- 28. An isolated polypeptide molecule comprising:
  - a) a sequence of SEQ ID NO: 3;
  - b) a sequence of SEQ ID NO: 4;
  - c) a sequence of SEQ ID NO: 5;
  - d) a sequence of SEQ ID NO: 1 or
  - e) a sequence of SEQ ID NO: 3; SEQ ID NO:4; and SEQ ID NO: 5; or
- f) a sequence having about 70% sequence identity with the sequence of a), b), c), d), or e).
- 29. The polypeptide molecule of claim 28, having about 90% sequence identity with the sequence of a), b), c), d), e), or f).

- 30. A fusion protein comprising the polypeptide of claim 28 and a heterologous peptide.
- 31. The fusion protein of claim 30, wherein the heterologous peptide is a substrate targeting moiety.
- 32. The fusion protein of claim 30, wherein the heterologous peptide is a peptide tag.
- 33. The fusion protein of claim 32, wherein the peptide tag is 6-His, thioredoxin, hemaglutinin, GST, or OmpA signal sequence tag.
- 34. The fusion protein of claim 30, wherein the heterologous peptide is an agent that promotes polypeptide oligomerization.
- 35. The fusion protein of claim 34, wherein the agent is a leucine zipper.
- 36. A cellulase-substrate complex comprising the isolated polypeptide molecule of claim 28 bound to cellulose.
- 43. A composition comprising the polypeptide molecule of claim 28 and a carrier.